No. 373

In the Supreme Court of the United States

OCTOBER TERM, 1942

THE UNITED STATES, CROSS-PETITIONER

v.

MARCONI WIRELESS TELEGRAPH COMPANY OF AMERICA

CROSS-PETITION FOR A WRIT OF CERTIORARI TO THE COURT OF CLAIMS

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CITATIONS

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On September 2, 1942, Marconi Wireless Telegraph Company of America, the plaintiff in the Court of Claims, filed a petition for writ of certiorari in *Marconi Wireless Telegraph Company of America* v. *The United States*, No. 369, seeking a review of those portions of the interlocutory and final judgments of the Court of Claims of the United States, rendered November 4, 1935, and April 6, 1942, respectively, which hold invalid certain claims of United States Patent No. 763,772 granted to Guglielmo Marconi on June 28, 1904, and hold certain claims of United States Patent

No. 803,684, issued to John Ambrose Fleming on November 7, 1905, not infringed by the United States. A brief in opposition to the petition is being prepared and will be filed on behalf of the United States.

The Solicitor General on behalf of the United States prays that in the event the Court grants the petition in No. 369, but only in that event, a cross-writ of certiorari be directed to the Court of Claims to review that portion of the judgment rendered April 6, 1942, which awards damages against the United States for infringement of Claim 16 of the Marconi patent. The certified transcript of record filed in No. 369 includes those portions of the record upon which this cross-petition is based.

OPINIONS BELOW

The opinion of the Court of Claims on the issues of validity and infringement (R. 7–116) is reported at 81 C. Cls. 671; its opinion in the accounting proceeding (R. 117–182) is not yet reported.

JURISDICTION

The interlocutory judgment of the Court of Claims upholding the validity of Claim 16 of the Marconi patent, in pursuance of which an accounting was held, was rendered November 4, 1935. The final judgment after accounting proceedings was rendered April 6, 1942. Time in which to file a petition and cross-petition for writs of certiorari was extended by the Chief Justice for a period

of 60 days from July 6, 1942 (R. 2523). The jurisdiction of this Court is invoked under section 3 (b) of the Act of February 13, 1925, as amended.

QUESTIONS PRESENTED

(1) Whether the Court of Claims erred in holding Claim 16 of the Marconi tuning patent (No. 763,772) valid and infringed. A subsidiary question is whether in the circumstances the court erred in refusing to consider evidence material to these issues introduced in the accounting proceedings.

(2) Whether in the absence of any finding or evidence which would have supported a finding that the patented receiver disclosed or attained the principal advantage attained by the receiver used by the United States, the Court of Claims could properly use the value of that advantage as a measure of compensation against the Government.

STATEMENT

The patent involved in this case and, with the Fleming patent (No. 803,684), involved also in No. 369, is United States Patent No. 763,772, granted to Guglielmo Marconi on June 28, 1904, and known as the Marconi four-circuit tuning patent (Pl. Ex. 21, Petition, Appendix C). This patent, now expired, related to wireless transmitting and receiving apparatus. More specifically, it relates to means for providing a stronger transmitted

signal and a more selective reception than had been attained prior to Marconi's disclosure. The alleged invention comprised a variably tuned antenna circuit inductively coupled through an oscillation transformer to a tuned closed oscillating circuit in both the transmitter and receiver. The patent specified that each of the four circuits should be tuned to the same frequency in order to secure the desired objects of strong signals and of selective reception. (See Finding XXXVIII, R. 31.)[1]

The patent included twenty claims, of which fifteen were involved in the suit below. Two of these claimed tuning the two transmitter and the two receiver circuits to the same wave length or frequency. Six were directed to the transmitter alone, and claimed tuning the transmitter circuits to the same frequency. The remaining seven claims in suit, including Claim 16, were directed to the receiver alone, and claimed tuning the two circuits at the receiver (*i. e.*, the antenna or open circuit, and the detecting circuit) to the same frequency.

The Court of Claims held that all of these claims except Claim 16 were anticipated by the prior work of John Stone Stone (Findings LVII and LVIII,

[1] References to Findings of Fact unless otherwise indicated are to those appearing in the Court of Claims decision of November 4, 1935.

R. 56–57). Claim 16,[2] while claiming means for tuning the two receiver circuits to the same frequency as did the six other receiver claims in suit, was held to be distinguished from them and from the prior art because of the additional element of an adjustable condenser connected with the open circuit and in shunt with the primary winding (j′) of the transformer (j′–j²) of the receiver. The court below found that the purpose of this condenser, as indicated in "the tables on page 4 of the specification * * *, is to enable the electrical periodicity or tuning of the open circuit of the receiver to be altered." (Finding LX, R. 57.) It concluded that Claim 16 was valid and had been infringed by the United States (R. 75).

During both the initial hearing and the subsequent hearing on accounting the Government contended and introduced evidence to show that Claim 16, to the extent valid at all, was not infringed. The evidence showed and the court found that the laws regarding the relationship of capacity and

[2] "16. At a receiving station employed in a wireless-telegraph system, the combination of an oscillation transformer, an open circuit connected with one coil of said transformer, said circuit including an oscillation-receiver conductor at one end and capacity at the other end, an adjustable condenser in a shunt connected with the open circuit and around said transformer coil, a wave-responsive device electrically connected with the other coil of the oscillation transformer, and means for adjusting the two transformer circuits in electrical resonance with each other, substantially as described."

inductance to achieve the tuning of an alternating current circuit were known prior to the Lodge patent (No. 609,154) (also in suit in the court below), which antedated the Marconi patent, and that Lodge taught the art to apply these laws to the so-called "open" antenna circuit (Findings XXXVI, LXI, R. 29–30, 57). The evidence also established and the court found that persons skilled in the art knew prior to Marconi's patent how to adjust the condensers shown in Stone's earlier patent to achieve the desired tuning, even though Stone's drawing did not show that his condensers were adjustable (Finding LIII, R. 47–51). In addition, the Fessenden patent as filed [3] prior to the earliest date proven for Marconi, showed an adjustable condenser in shunt with all the inductance coils in the antenna circuit of a wireless receiver; and the Pupin patent,[4] also prior to Marconi, not only showed a similar arrangement, but fully explained the laws governing its operation, which were known at the time of Fessenden's application in 1899. (Findings XXXVI, LIII, R. 29–30, 47.)

As appears from the face of the patents, the only novel difference between the condenser arrangement shown by Marconi and that disclosed by Fessenden and Pupin is that in every instance in which the condenser (h) is present in the

[3] Patent No. 706,735, Pl. Ex. 171, pages, 90, 93; Def. Exs. LL and CCCC, Fig. 1.

[4] Patent No. 640,516, Def. Exs. U–2 and KK (Fig. 2).

tables on page 4 of the Marconi specification, referred to by the court in the quotation *supra*, p. 5, a variable inductance tuning coil (g′) not bridged by the condenser is employed,[5] whereas in the Fessenden and Pupin constructions there were no inductance coils not bridged by the condenser. The evidence shows that the same difference exists between Marconi's claimed invention and the receivers used by the Government, where the variable condenser alleged to infringe is employed in the open circuit. The court below in its findings of fact reproduced the drawings of the two types of circuit employed by the Government, and these drawings show that in each instance the condenser (h) in its solid-line position[6] bridges all the inductance coils (that is, both g and j) in the circuit between the aerial and ground (Finding 23, April 6, 1942, R. 139).

The evidence shows that this difference in arrangement produces a difference in mode of operation of the circuits yielding diametrically opposed results: In the Marconi arrangement the presence

[5] The text of the Marconi patent (p. 1, lines 56–59) states: "The system also requires as *essential elements* thereof the inclusion in the lines (at both stations) from the aerial conductor to the earth of *variable inductances* * * *." (Italics supplied.) The only variable inductance disclosed in the antenna circuit of the receiver is the tuning coil (g′), which is *not* bridged by the condenser (h) (Finding XXXVIII, R. 31–32).

[6] The dotted-line position is an alternative arrangement of the condenser not alleged to infringe (see Finding 23, April 6, 1942, R. 139).

of the condenser in series between tuning coil g' and the earth, makes the condenser act in *series* with the antenna-to-earth capacity and causes the primary tuned circuit to respond to *decreased* wave lengths;[7] in the Government's structure the presence of the condenser in parallel with *all* the inductance coils in the circuit, places it in *parallel* with the antenna-to-earth capacity and causes the primary tuned circuit to respond to *increased* wave lengths.[8] The court below, in the accounting proceeding, found in effect that the shunt-connected condenser in cross-petitioner's receiver enabled the receiver to be tuned to longer wave lengths than would be the case with the normal connection (Findings Nos. 28, 29 and 45, April 6, 1942, R. 143, 156). It made no finding that the Marconi circuit was designed for this purpose or achieved this result and the only testimony was to

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[7] *Tuska*, R. 2509, XQQ. 266, 268; *Wheeler*, R. 2434 (Q. 55), 2438, 2451, 146 Q.; Def. Ex. BBB; *Waterman*, R. 357-358; *Loftin*, R. 977.

[8] *Pickard*, R. 2328-2335; *Tuska*, R. 2498, Q. 107.

[9] The experts who testified below were agreed that the Marconi shunt-condenser-connection was merely a "by-path" around only the coupling coil j' (not bridging the antenna tuning coil g'; see note 7, *supra*) and had no important modifying effect on the general mode of operation. The only significant result of the condenser as used in the Marconi patent was to effect a loose coupling arrangement, which was not used in the Government's structure. The decrease in wave length caused by the condenser as used was slight and incidental. (*Tuska*, R. 2509, XQQ. 266, 268; *Loftin*, *Wheeler*, *Dow*, R. 977; 2434 (Q. 55), 2477 (124 Q.), 2465 (255 XQ.); 2364, 2367; *Waterman*, R. 357, 358).

the contrary.[2] It simply found in its decision of November 5, 1935, that the Government's receivers had "apparatus coming within the terminology of Claim 16" (Finding LXIII, R. 60), and, in its decision after the accounting proceeding, that "The adjustable condenser in such a circuit had the function and effect similar to that possessed by the adjustable condenser of the Marconi patent * * *." (Finding 24, April 6, 1942, R. 139.)

In the accounting proceeding the Marconi Company proved, and the court below found (Findings 29 and 45, April 6, 1942, R. 143, 154), that in the Government's receiver the shunt-connected condenser enabled the receiver to be tuned to longer wave lengths than would be the case with the normal connection, and enabled the periodicity of the open circuit to be broadly changed. The court then found that the same advantages could have been attained by the prior-art method of using an additional inductance coil in the antenna circuit, and the cost of such additional coils would have been $66,130.67, of which the court allowed the plaintiff 65% ($42,984.93) with interest. The court declined to consider evidence adduced by the Government which explained the functions of the condenser in the Marconi arrangement and showed that the advantage of cross-petitioner's device was not attained by the device covered by claim 16 of the Marconi patent. (Opinion, April 6, 1942, end of page 61, R. 176–177.

SPECIFICATION OF ERRORS TO BE URGED

The Court of Claims erred:

(1) In finding as an ultimate fact that claim 16 of the Marconi patent was valid and was infringed, without first determining its scope in view of the prior art.

(2) In failing to make a finding of fact as to the particular advantage achieved by the shunt condenser in the open antenna circuit of the Marconi patent, and in making a finding of infringement in the absence of such finding.

(3) In failing to find as a fact that the disclosure of the Marconi patent upon which claim 16 is based did not possess the principal advantage of cross-petitioner's structure but possessed a different advantage not used by cross-petitioner.

(4) In basing compensation upon the principal advantage present in cross-petitioner's structures, when such advantage was not disclosed or attained in the patent in suit.

(5) In not revising its findings of fact to conform to the entire evidence in the case where evidence necessarily admitted in the accounting proceedings, to establish a basis for compensation, disclosed incompleteness and error in the findings of fact theretofore made in relation to the infringement of claim 16 of the Marconi patent (No. 763,772).

REASONS FOR GRANTING THE WRIT

1. Although the Government is of opinion that neither the questions presented by the petition in No. 369 nor those presented by this cross-petition are of sufficient importance to call for a review by this Court, it submits that if the petition in No. 369 is granted, similar action should be taken in this case. The questions raised herein are at least of equal interest and it would seem desirable for the Court to review all related matters in controversy between the parties if it reviews any. A review in No. 369, unless limited to the Fleming patent, would involve a consideration of all the Marconi tuning claims in suit, including Claim 16 so far as it covers four-circuit tuning.

2. On November 10, 1900, the earliest date established for the Marconi patent (Finding XLI, R. 37), the use of the feature which was held to establish the validity of Claim 16, namely, the use of a condenser in shunt with the transformer primary for the purpose of varying the periodicity of the open circuit, was old in the art. The prior art is exemplified by the Fessenden patent (No. 706,735) granted August 12, 1902, on an application filed December 13, 1899 (Finding XLII, R. 37), and by the Pupin patent (No. 640,516) Def't's. Exh. KK, Fig. 2.) Both show the use of a Def't's. Exh. KK, Fig. 2.). Both show the use of a condenser in shunt with the primary of the transformer coil and both adjust the values of these condensers to vary the periodicity of the circuit.

Claim 16, therefore, is anticipated by these patents, unless it be limited to the feature of a coil not bridged by the condenser in shunt. Cf. *Knapp* v. *Morss*, 150 U. S. 221; *American Fruit Growers, Inc.*, v. *Brogdex Co.*, 283 U. S. 1. But so limited, it was not infringed by the structure used by the Government.

The settled rule is that, to infringe, a structure must be substantially the same as the patented structure in arrangement, mode of operation, and result.[10] The evidence hereinbefore summarized (pp. 5–9) shows that the combination of elements in, mode of operation of, and result attained by the Government's structure are different from those of the Marconi disclosure when Claim 16 is limited in the manner necessary both on principle and to establish its novelty over the prior art; that the circuits of the Fessenden and Pupin patents, which automatically increase the wave length, are substantially the same as the Government's circuits and fully justify the Government's manner of using the condenser to attain an increased wave length;[11] and that the circuit claimed by Marconi does not attain the advantage of increased wave length on the basis of which the Court of Claims computed its award against the United States on the accounting.

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[10] *Westinghouse* v. *Boyden Power Brake Co.*, 170 U. S. 537; *Holland Fur. Co.* v. *Perkins Glue Co.*, 277 U. S. 245, 257; *Sanitary Refrigerator Co.* v. *Winters*, 280 U. S. 30, 42; *Craftint Mfg. Co.* v. *Baker*, 94 F. (2d) 369, 373 (C. C. A. 9).

[11] *Knapp* v. *Morss*, *supra*.

3. In basing the amount of the judgment upon the advantage of increased wave length attained by the Government's receiver, without finding that such advantage was disclosed or attained by the patented structure, the Court of Claims reached a result which conflicts in principle with decisions of this Court (*Westinghouse Co.* v. *Wagner Mfg. Co.*, 225 U. S. 604; *Dowagiac Mfg. Co.* v. *Minnesota Plow Co.*, 235 U. S. 641; *Sheldon* v. *Metro-Goldwyn Pictures Corp.*, 309 U. S. 390, 402) and of circuit courts of appeals.[12]

CONCLUSION

For the reasons stated, it is prayed that if the petition for a writ of certiorari in No. 369 is granted to review the decision of the Court of Claims with respect to the Marconi patent (No. 763,772), this petition for a review of the same decision of the Court of Claims with respect to Claim 16 of that patent be granted also.

CHARLES FAHY,
Solicitor General.

SEPTEMBER 1942.

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[12] *Cincinnati Car Co.* v. *New York Rapid Transit Corp.*, 66 F. (2d) 592 (C. C. A. 2); *Stromberg Motor Devices Co.* v. *Detroit Trust Co.*, 44 F. (2d) 958 (C. C. A. 7).

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